Recommendation Report: Solutions to the ActiveRH problem

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The ActiveRH website is where residents of Richmond Hill can sign up for and participate in community activities. As the team assigned to oversee this issue, you may recall a previous memo where design and accessibility issues with the ActiveRH website were described in detail. This report offers three possible solutions to the problem and then compares the solutions to produce a final recommendation.

Background

In past years the ActiveRH website was used as a platform to showcase information about upcoming community events. Sometimes, the payment processing feature was used for fundraising. Until early 2020, almost all registration was done in person. The pandemic changed how people interact physically, so registration was to be moved online. Already with program information and a payment processing feature, the ActiveRH website became the natural choice for where residents would go to register. However, a lack of planning and caution in appending the new pages to ActiveRH has created many issues. See the previous problem memo for a precise explanation of these many issues.

Technical Background

The term ‘website’ is in reference to a collection of related ‘website pages’ or simply ‘pages’. For example, the check-out page and the programs list page are both part of the larger ActiveRH website. The term ‘system’ is used to describe the entire architecture necessary to run ActiveRH. This includes the website’s files and the hardware used to send and receive information throughout the internet. ‘Active Network’ is a company partnered with our website; they provide payment processing services.

Problem Description - Current state of ActiveRH

Users of the ActiveRH website seek to join in community activities despite the ongoing COVID-19 pandemic, which has made social gathering difficult. As the only point of entry into community activities, ActiveRH should be accessible and easy to use. However, the website by way of poor design, has failed to make registration easy or accessible. Information on activities is mislabeled, missing, or incorrect. Links do not direct the user to where they would expect. E-commerce functionality is confusingly segregated between two platforms. The website fails to meet many online accessibility standards. Overall, the inaccurate information, confusing navigation, and lack of accessibility make ActiveRH not suitable for use.

Requirements for a suitable solution

The many issues that lie at the foundation of the ActiveRH website create the larger problem. To fix each of these many issues would completely restructure the foundation of ActiveRH and produce further problems if not done correctly. Any suitable solution requires a strong foundation; therefore, the website must be rebuilt. Rebuilding the website allows the continued use of current servers and databases. While the website must be rebuilt, the ActiveRH system can largely be reused and use of Active Network’s registration system may be used or can be replaced. This problem’s relatively small scale suggests it is to be resolved in an affordable, fast, and long-lasting manner. A long-lasting solution

is one that is of high quality and, with little maintenance, will continue being of high quality into the future. Given these restrictions, three options are suitable:

1. Our IT team can undertake the project entirely.
2. We contract an outside company to build and maintain the system.
3. A company is contracted to build the website and our IT team will manage long-term maintenance.

Comparison of suitable solutions

The three solutions are compared on four factors: affordability, time till completion, quality of the result, and long-term viability.

IT department undertakes the project.

Generating a solution without contracting outside companies will dramatically reduce the cost. However, the IT department may not have the necessary talent required to create a suitable solution. The department would need to hire new employees, but their ability to create a suitable solution will also be highly variable. This option is likely not the cheapest nor the most expensive. Costs can be saved by hiring internal staff, but training and quality of work may exceed any savings. Further, the time it would take to implement the new website is also highly variable. There is no guarantee that a solution will be implemented soon, or even at all. Finally, the quality of the final product and its long-term viability is directly proportional to the hired workers' quality, so once again, there is a wide range of variance.

Contracting an outside company.

Many companies are built up of teams of web development professionals. In contracting their services, all work is outsourced to them. Initially, the cost of legal work and efforts from several of our employees will be necessary to ensure we correctly communicate our desired result. Once past this

phase, the solution's cost is constant, and we can be confident that it will not exceed our budget as the project progresses. Further, within the contract will be an agreed-upon time range, which ensures the result is produced in a timely fashion. It is the company's business to deliver high-quality products and to maintain the website into the future. So, with this option, there is little variance in quality, cost, or long-term viability.

A union of both internal IT and contract company.

This solution proposes that we contract an outside company to build the website, but our internal IT department will do maintenance in the long-term. The website will be built under contract by the chosen company so we can be confident that the end result will of high quality and produced quickly. Once built, our IT team can manage the rest of the ActiveRH system. We save the cost that would otherwise be paid to the company for their support services. This option is the cheapest but may not be viable if our IT team cannot consistently maintain the website.

Conclusions

Employing our IT staff to entirely or partially create the solution allows great opportunity for cost savings but also introduces a significant amount of variability into how long the project will take and its final quality. Time and long-term quality are of high priority, suggesting that contracting an outside company is a strong option. Affordability is also an important factor, suggesting that employing the IT staff to create the solution is a strong option. However, it is not clear that the current IT team can build a high-quality solution, and the process of hiring new employees may generate more cost than merely contracting an outside company. While all three options are viable, they are not equal in strength. The time it takes to create and implement the product is important but is irrelevant if the final product is not viable. The cost of the solution process is important, but if the result is not viable then there will be new issues to fix. Therefore, quality is the essential factor. Contracting an outside company to create and manage the solution will produce a fast, high-quality, long-term solution.

Recommendation

I recommend that the city contract a company to build and manage the solution to this problem. This option's initial cost is high but provides a confidence in the quality and reliability of the final product that no other solution can provide.

References

Acosta-Vargas, P., Acosta, T., & Lujan-Mora, S. (2018). Challenges to Assess Accessibility in Higher Education Websites: A Comparative Study of Latin America Universities. IEEE Access, 6, 36500–36508. https://doi.org/10.1109/access.2018.2848978

Budget Committee of the Whole. (2020). 2021 Draft Capital Budget. *Richmond Hill.* Retrieved from https://www.richmondhill.ca/en/shared-content/resources/documents/2021-Draft-Capital-Budget.pdf

Kuhar, S., Pusnik, M., Sumak, B., & Kous, K. (2019). Comparative analysis of faculties' websites accessibility based on an automatic evaluation. *2019 42nd International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO)*, 1498–1502. https://doi.org/10.23919/MIPRO.2019.8757202

Palmer, Z. B., & Palmer, R. H. (2018). Legal and Ethical Implications of Website Accessibility. *Business and Professional Communication Quarterly*, *81*(4), 399–420. https://doi.org/10.1177/2329490618802418

Petrie, H., & Kheir, O. (2007). The relationship between accessibility and usability of websites. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems - CHI '07*, 397–406. https://doi.org/10.1145/1240624.1240688